SHAPING

CHARACTERISTICS OVERVIEW CHART

Verbal Skills	Grade Levels	Cognitive Level	Areas Addressed
☒Nonverbal	☐PK	☒Classic	☐ (Pre)Academic/Cognitive/Academic
☒Mixed	☒Elementary	☒High	☐Adaptive Behavior/Daily Living
☒Verbal	☐Middle/High	Functioning	☒Behavior
			☒Communication/Speech
			☒Social/Emotional

BRIEF INTRODUCTION

Shaping is a useful applied behavior analysis (ABA) technique for teaching new behavior. When the desired behavior is not easy to acquire by instruction or other prompts, teachers can reinforce predetermined approximations of a behavior in order to teach the target behavior. It is recommended that a systematic approach be used to provide reinforcement when closer approximations to the target behavior are detected (Alberto & Troutman, 2006).

DESCRIPTION

Shaping is used when an existing behavior needs to be changed into a more appropriate or new behavior or skill. The strategy involves use of reinforcement of successive approximations of a desired behavior. Specifically, when using a shaping technique, each approximate desired behavior that is demonstrated is reinforced, while behaviors that are not approximations of the desired behavior are not reinforced.

For example, if a child engages with a peer by hitting him, this behavior may be shaped by reinforcing interactions in which he touches the peer more gently. Over many interactions, successful shaping would replace the hitting behavior with other gentle behavior. It is believed that by reinforcing a desired behavior, the child will increase the desired behavior and eliminate or change the undesired behavior. Shaping is a part of the principles of ABA and is based on

thorough knowledge of operant conditioning principles and extinction (Cooper, Heron, & Heward, 2007).

Shaping behavior is an aspect of behavior analysis that gradually teaches new behavior through the use of reinforcement until the target behavior is achieved. In order for shaping to be successful, it is important to clearly define the behavioral objective and the target behavior. Also, in order to gradually achieve the target behavior, a teacher must know when to deliver or withhold reinforcement (Wolfgang, 2001).

STEPS

Shaping starts with a task analysis in which a desired behavior is broken down into smaller and more manageable steps that would move the child successively closer to that desired behavior. For example, if the desired behavior is to play independently for 10 minutes with two or fewer prompts, a step analysis may break the desired behavior down into the following approximations:

1. Play for 2 minutes with two or fewer prompts
2. Play for 4 minutes with two or fewer prompts
3. Play for 6 minutes with two or fewer prompts
4. Play for 8 minutes with two or fewer prompts
5. Play for 10 minutes with two or fewer prompts.

Once the small approximations of the desired behavior are clearly identified, one must select the reinforcement to be used and make sure that everyone working with the student knows which behavior, when, and how to reinforce the approximations. Data on the behavior should be collected and reviewed by the team. The program must continue until the child demonstrates the desired behavior.

BRIEF EXAMPLE

Ms. Brown, 10-year-old Jason's general education teacher, and Ms. Henderson, Jason's resource room teacher, targeted sitting in his seat during lectures as a desired behavior for Jason during social studies and reading in general and special education settings, respectively. Ms. Henderson suggested a shaping technique to teach seated behavior after she had determined that Jason was remaining in his seat a mean of 2 minutes during social studies.

They analyzed approximations of the target behavior and planned to reinforce those behaviors as follows:

- Reinforcing when Jason sits in his seat for a 3 minutes
- Reinforcing when Jason sits in his seat for 5 minutes
- Reinforcing when Jason sits in his seat for 10 minutes
- Reinforcing when Jason sits in his seat for 15 minutes
- Reinforcing when Jason sits in his seat for 20 minutes (the targeted time)

Both Ms. Brown and Ms. Henderson differentially reinforced Jason's sitting behavior in their classrooms based on their criterion of approximations for each phase. After six weeks, Jason acquired sitting behavior in class.

SUMMARY

Shaping is a systematic process of reinforcing successive approximations to a target behavior. The technique is used when students need to learn new behavior. A teacher identifies the student's behavior and provides reinforcement only for closer approximations toward the desired behavior, which is a terminal behavior of the shaping process. Shaping is especially useful when the desired behavior is difficult to learn by instruction, imitation, and verbal or physical cues.

RESEARCH TABLE

Number of Studies	Ages (year)	Sample Size	Area(s) Addressed	Outcome
2	6-8	4	Vocalization frequency, social behavior	+

STUDIES CITED IN RESEARCH TABLE

1. Esch, B. E., Carr, J. E., & Michael, J. (2005). Evaluating stimulus-stimulus pairing and direct reinforcement in the establishment of an echoic repertoire of children diagnosed with autism. *Analysis of Verbal Behavior, 21*, 43-58.
   Three experiments were conducted to evaluate stimulus-stimulus pairing and direct reinforcement in establishing an echoic repertoire for three children (Ages 6 & 8) with autism. One intervention, Experiment 3, demonstrated that shaping increased vowel frequency for one participant.

2. Hupp, S.D.A., & Reitman, D. (2000). Parent-assisted modification of pivotal social skills for a child diagnosed with PDD: A clinical replication. *Journal of Positive Behavior Interventions, 2*, 183-187.
   Two parents were instructed in implementing a token reinforcement and shaping program designed to improve the social behavior of their 8-year-old son diagnosed with PDD. Results showed positive response generalization by targeting one pivotal behavior.

REFERENCES

Alberto, P. A., & Troutman, A. C. (2006). *Applied behavior analysis for teachers* (7th ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Esch, B. E., Carr, J. E., & Michael, J. (2005). Evaluating stimulus-stimulus pairing and direct reinforcement in the establishment of an echoic repertoire of children diagnosed with autism. *Analysis of Verbal Behavior, 21*, 43-58.

Hupp, S.D.A., & Reitman, D. (2000). Parent-assisted modification of pivotal social skills for a child diagnosed with PDD: A clinical replication. *Journal of Positive Behavior Interventions, 2*, 183-187.

Wolfgang, C. H. (2001). Solving discipline and classroom management programs: Methods and models for today's teachers. New York: John Wiley.

RESOURCES AND MATERIALS

- Association for Science in Autism Treatment (ASAT):
  http://www.asatonline.org/intervention/procedures/shaping.htm
  This link is to the ASAT's fact sheet on shaping.

- Shaping: http://www.polyxo.com/discretetrial/complex.html
  The information in this site provides basic information about some examples of shaping.

- Shaping and Chaining: http://www.bbbautism.com/aba_shaping_and_chaining.htm
  This link takes the user to information that defines and provides rules for using shaping and chaining.

- Shaping: http://cdd.unm.edu/swan/autism_course/modules/behavior/shaping/index.htm

GENERAL RESOURCES

- Autism Internet Modules (AIM) www.autisminternetmodules.org. The Autism Internet Modules were developed with one aim in mind: to make comprehensive, up-to-date, and usable information on autism accessible and applicable to educators, other professionals, and families who support individuals with autism spectrum disorders (ASD). Written by experts from across the U.S., all online modules are free, and are designed to promote understanding of, respect for, and equality of persons with ASD.

- The Autism Web Course: http://cdd.unm.edu/swan/autism_course/about/index.htm.
  This web course was developed out of materials from the Interactive Collaborative Autism Network (ICAN). The Autism Programs at the University of New Mexico has updated and added information to this web course.
  - Characteristics
  - Assessment
  - Academic Interventions
  - Behavioral Interventions
  - Communication Interventions
  - Environmental Interventions
  - Social Interventions
  - Family Support Suggestions

- Indiana Resource Center for Autism (IRCA)
  http://www.iidc.indiana.edu/irca/fmain1.html. The Indiana Resource Center for Autism staff's efforts are focused on providing communities, organizations, agencies, and families with the knowledge and skills to support children and adults in typical early intervention, school, community, work, and home settings.
  - IRCA Articles: http://www.iidc.indiana.edu/index.php?pageId=273

- Texas Statewide Leadership for Autism www.txautism.net. The Texas Statewide Leadership for Autism in conjunction with the network of Texas Education Service center with a grant from the Texas Education Agency has developed a series of free online courses in autism. Please check the training page, www.txautism.net/training.html, for update lists of courses, course numbers and registration information. Current courses include the following:
    - Asperger Syndrome 101
    - Augmentative and Alternative Communication and the Autism Spectrum
    - Autism for the General Education Teacher
    - Autism 101: Top Ten Pieces to the Puzzle
    - Classroom Organization: The Power of Structure for Individuals with ASD
    - Communication: The Power of Communication for Individuals with ASD
    - Futures Planning for Students with Autism Spectrum Disorder
    - Navigating the Social Maze: Supports and Interventions for Individuals with ASD
    - Solving the Behavior Puzzle: Making Connections for Individuals with ASD